



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/728,996	12/05/2003	Robert I. Clayton	27735.20	9112
27683	7590	09/25/2006	EXAMINER	
HAYNES AND BOONE, LLP 901 MAIN STREET, SUITE 3100 DALLAS, TX 75202			STEPHENSON, DANIEL P	
			ART UNIT	PAPER NUMBER
			3672	

DATE MAILED: 09/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.



## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3, 4, 7-9, 15, 17, 18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bodine '619 in view of Berryman. Bodine '619 (Figures 9) discloses an apparatus for imparting mechanical vibration on a down-hole drilling system. The body has ports configured to pass fluid through the body. There are first and second couplers configured to couple the body to the down-hole drilling system. There is a rotating member (22) located at least partially in the body and rotatable about an axis of rotation in response to flow of the fluid. Rotation of the rotating member generates mechanical vibration imparted on the down-hole drilling system. The rotating member (22) has an outer-spiraled geometry. The body (27) has an inner-spiraled geometry. The fluid flowing through the drill string imparts an external energy. The shaft and rotors (22) represent a converter located at least partially within the body and configured to convert the external energy into vibration energy. A vibrating member (27) imparts the vibration energy to the down-hole drilling member. The vibrating member vibrates in response to the vibration energy in a first direction substantially parallel with the axis of rotation and a second direction substantially orthogonal to the axis of rotation. The interior surface of the body has a lobed geometry having a number of lobes that is equal to the number of lobes on the exterior of the vibrating member. The vibrating member is integral to the body.

Art Unit: 3672

Bodine '619 does not disclose that the Lobes on the rotating member 22 are different then the lobes on the interior of the vibrating member (27). Berryman (fig. 5) discloses that motor (10) for a drill bit that has a rotor (21) and a stator (19). The lobes on the interior of the stator are greater then the lobes on the exterior of the rotor. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the rotor/stator arrangement of Berryman on the apparatus of Bodine '619. This would be done to generate more torque as taught by Berryman (col. 1 line 66- col. 2 line 14).

With regards to claim 18, in Fig. 10 of Bodine '619 there is disclosed an embodiment of the invention that uses an electrical motor to power the vibration mechanism. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the electric motor of one embodiment in another embodiment of Bodine '619. This would be done to provide alternate means of powering the vibrator downhole depending on what factors are present in such an environment.

#### ***Allowable Subject Matter***

3. Claims 14 and 19 are allowed.
4. Claims 2, 10-12 and 16 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Response to Arguments***

5. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Art Unit: 3672

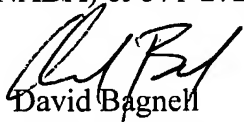
*Conclusion*

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Worrall et al. shows similar features to the claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel P. Stephenson whose telephone number is (571) 272-7035. The examiner can normally be reached on 8:30 - 5:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David J. Bagnell can be reached on (571) 272-6999. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
David Bagnell  
Supervisory Patent Examiner  
Art Unit 3672

DPS *[initials]*